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Avian body weights from the lower Rio Xingu, Brazil

by Gary R. Graves & Richard L. Zusi

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From 13 August to 30 September 1986, we surveyed the avifauna of the east bank of the lower Rio Xingu (3°39′S, 52°22′W) from an encampment 52 km SSW of Altamira, Pará, Brazil, as part of a biological survey of the region sponsored by the Academia Brasileira de Ciências. The purpose of this paper is to present data on the body weights of birds sampled from populations at this locality. Some data of this type from eastern Amazonia are scattered among recent publications (e.g. Oren 1987), but most of these deal only with selected species. None of the older works on birds of the lower Rio Xingu mentions body weights (Snethlage 1913, Griscom & Greenway 1941).

Three major terrestrial habitats occur naturally along the lower Rio Xingu: **(1)** *seasonally flooded forest*; **(2)** *terra firme forest*; **(3)** *successional island scrub*. A fourth habitat type, agricultural clearing and man-caused secondary growth, was restricted to small scattered patches near the river

on the east bank. We used mist-netting as well as straight observation, and collected some specimens. A network of trails (10+ km) radiating from the base camp was cut through virgin forest and secondary growth. Mist-nets (12 m) were set using standard techniques in selected sites in all 'mainland' habitat types. 12–30 mist-nets ($\bar{x}=22$) were maintained throughout the survey period, for a total of 1056 net/days. More than two-thirds of the field observation time (288 hrs) was spent in seasonally flooded and terre firme forest. 263 species were recorded during the survey. Based on the cumulative curve of species added over 48 survey days, we estimate that from 300–310 species were resident within 10 km of our base camp.

Below we present body weight data by sex for 750 individuals of 201 species. For reference, 62 species observed but not collected are listed in the Appendix. Voucher specimens were deposited in the National Museum of Natural History (Smithsonian Institution) and the Museum of Zoology, University of São Paulo. Weights of birds (including gut contents) were taken soon after death with Pesola spring scales for 5, 10, 30, 50, 100 and 300 g and with a 10 kg spring scale. Weights up to 10 g were rounded to the nearest 0.1 g, those from 10 to 300 g to the nearest 1.0 g, and those above 300 g to the nearest 5.0 g. Because our spring scales measure weights but read in grams (unit of mass), we use the familiar term 'weight' while presenting the figures in grams.

These weight data include species that have small geographic ranges (e.g. *Penelope pileata, Gypopsitta vulturina, Pyrrhura perlata, Neomorphus squamiger, Lophornis gouldii*) or are rare and poorly known (e.g. *Synallaxis cherriei, Simoxenops ucayalae, Hylopezus berlepschi, Conopophaga melanogaster, Taeniotriccus andrei*). Also noteworthy are data for large-bodied species that are rarely weighed in the field (e.g. *Phalacrocorax olivaceus, Cathartes melambrotos, Leucopternis schistacea, Psophia viridis*). Notes on the taxonomy and distribution of selected species will be published elsewhere.

Taxonomy of the species arrangement below follows Morony *et al.* (1975). Numbers in parentheses equal sample size for a particular weight class. [a]Collected on the east bank of the Rio Iriri near the confluence of the Rio Xingu and Rio Iriri (Iriri Camp, 85 km SW Altamira, 3°50′S, 52°40′W).

Tinamus major: ♂ 1050
Crypturellus variegatus: ♂♂ 310, 365
Phalacrocorax olivaceus: ♂♂ 1400, 1450
Ardea cocoi: ♀ 2100
Cathartes melambrotos: ♂ 1650
Harpagus bidentatus: ♂ 165
Accipiter superciliosus: ♂ 67
Leucopternis schistacea: ♀ 455
Daptrius americanus: ♂ 510
Falco rufigularis: ♂ 125
Ortalis motmot: ♂ 345
Penelope pileata: ♂ 1100; ♀ 1420[a]
Crax fasciolata: ♀ 2280
Odontophorus gujanensis: ♂ 380
Psophia viridis: ♀ 1170[a], 1200[a]
Aramides cajanea: ♂ 420; ♀ 350

Vanellus cayanus: ♂ 72, 73; ♀ 79
Phaetusa simplex: ♀ 240
Columba plumbea: ♂ 132; ♀ 126
Columbina passerina: ♂♂ 24 (2); ♀ 28
Leptotila verreauxi: ♂ 140
Leptotila rufaxilla: ♂♂ 115, 135, 162, 167; ♀♀ 122, 128, 137, 145
Geotrygon montana: ♂♂ 86, 105
Ara ararauna: ♀ 995
Ara macao: ♀ 1040
Ara severa: ♀ 285
Aratinga leucophthalmus: ♀♀ 145, 148
Aratinga aurea: ♂ 94
Pyrrhura perlata: ♂♂ 70, 80
Pyrrhura picta: ♂♂ 46, 47, 51; ♀ 48
Brotogeris chrysopterus: ♂♂ 68, 72; ♀♀ 58, 59
Gypopsitta vulturina: ♂♂ 138, 150; ♀ 142
Pionus menstruus: ♂ 215
Amazona ochrocephala: ♂ 535; ♀ 505
Piaya cayana: ♂ 92
Crotophaga major: ♂♂ 170, 200
Neomorphus squamiger: ♂ 340[a]
Otus choliba: ♂ 123; ♀ 125
Otus watsonii: ♂♂ 115 (2), 116, 122; ♀♀ 127, 141
Ciccaba virgata: ♂ 240
Lurocalis semitorquatus: ♂ 60
Nyctiprogne leucopyga: ♂♂ 23, 24 (2), 27; ♀♀ 23 (2), 26
Nyctidromus albicollis: ♂♂ 49, 53, 54
Nyctiphrynus ocellatus: ♂ 35; ♀ 39
Caprimulgus nigrescens: ♀♀ 33, 38, 40
Hydropsalis climacocerca: ♂♂ 39, 41, 54, 55; ♀♀ 35, 47
Glaucis hirsuta: ♂♂ 5.6, 6.0, 6.3, 6.5
Threnetes leucurus: ♂♂ 4.8, 5.4
Phaethornis superciliosus: ♂♂ 4.5, 4.6 (2), 4.8, 4.9, 5.0 (3), 5.5; ♀♀ 4.2, 4.5, 5.6
Phaethornis ruber: ♂ 2.3; ♀ 2.3
Campylopterus largipennis: ♀ 7.0
Lophornis gouldii: ♀ 2.4
Thalurania furcata: ♂♂ 4.0, 4.1 (2), 4.3; ♀♀ 3.3, 3.4, 3.8, 4.1, 4.2
Polyplancta aurescens: ♂ 6.0
Heliothryx aurita: ♂ 4.5
Trogon viridis: ♂ 81; ♀ 87
Chloroceryle amazona: ♂ 116; ♀ 105
Chloroceryle americana: ♂ 24
Chloroceryle inda: ♂♂ 41, 51; ♀ 50
Chloroceryle aenea: ♂ 11
Momotus momota: ♂ 148
Galbula albirostris: ♂♂ 20, 21 (2), 23 (3), 24 (2); ♀♀ 21 (2), 22
Galbula ruficauda: ♂ 22 (2); ♀♀ 20, 22
Galbula dea: ♂♂ 30, 39
Jacamerops aurea: ♂ 73
Notharchus tectus: ♀ 30
Malacoptila rufa: ♂♂ 39, 44; ♀♀ 40, 43
Monasa nigrifrons: ♂♂ 68 (2), 71, 75; ♀♀ 75, 77
Monasa morphoeus: ♂ 77; ♀ 87
Chelidoptera tenebrosa: ♂♂ 34, 36
Pteroglossus bitorquatus: ♀ 120
Pteroglossus aracari: ♂♂ 237, 272
Ramphastos vitellinus: ♀ 317
Ramphastos tucanus: ♂♂ 555, 570
Picumnus aurifrons: ♂ 9.1
Veniliornis affinis: ♂ 30
Piculus flavigula: ♂♂ 64, 68; ♀ 63
Celeus flavus: ♂♂ 105, 114

Dryocopus lineatus: ♂ 174
Campephilus rubricollis: ♂ 207
Dendrocincla fuliginosa: ♂♂ 37, 43 (3), 44 (3); ♀♀ 29, 35, 36
Dendrocincla merula: ♂♂ 28, 31, 32 (2), 35, 36, 38, 43; ♀♀ 29, 33, 34
Deconychura stictolaema: ♀ 13 (2)
Sittasomus griseicapillus: ♂ 17; ♀ 11
Glyphorhynchus spirurus: ♂ 14, 15, 16 (2), 17 (4), 20; ♀♀ 13, 15, 21 (2)
Nasica longirostris: unsexed 82
Xiphocolaptes promeropirhynchus: ♂ 111; ♀ 102
Dendrocolaptes concolor: ♂♂ 50, 52, 58, 62; ♀♀ 52 (2), 64, 66, 67
Dendrocolaptes picumnus: ♂ 77
Xiphorhynchus picus: ♂♂ 34, 35, 36; ♀♀ 34, 35, 38
Xiphorhynchus obsoletus: ♂♂ 27, 30; ♀♀ 24, 26, 30 (2)
Xiphorhynchus spixii: ♂♂ 30 (2); ♀♀ 30, 31, 32
Xiphorhynchus eytoni: ♂♂ 61 (3), 64, 65; ♀♀ 45, 50, 53, 55
Campylorhamphus procurvoides: ♀♀ 38 (2)
Furnarius figulus: ♂ 28
Synallaxis gujanensis: ♂19
Synallaxis rutilans: ♂ 14; ♀♀ 17 (2), 19
Synallaxis cherriei: ♂ 16
Simoxenops ucayalae: ♂ 39 (placed in *Philydor* by Morony *et al.* 1975)
Philydor erythrocercus: ♂♂ 24 (2); ♀♀ 18, 20, 21 (2), 22
Philydor pyrrhodes: ♂ 33; ♀ 24
Automolus infuscatus: ♂♂ 35, 36, 37, 41; ♀♀ 32, 34
Automolus rufipileatus: ♂♂ 36, 38 (3); ♀ 31
Xenops minutus: ♂♂ 9.3, 10.0 (2), 11 (2); ♀♀ 8.8, 9.0, 9.9
Sclerurus mexicanus: ♂♂ 20, 21, 22 (2); ♀♀ 21, 27
Sclerurus caudacutus: ♂♂ 34, 35; ♀ 35
Cymbilaimus lineatus: ♂♂ 31, 36
Taraba major: ♂ 57
Sakesphorus luctuosus: ♂♂ 31, 34 (2); ♀♀ 28 (2), 32, 33
Thamnophilus schistaceus: ♂♂ 19, 20; ♀ 21
Thamnophilus amazonicus: ♂♂ 15, 19 (3), 22; ♀♀ 17 (2), 21
Pygiptila stellaris: ♂♂ 19, 23; ♀♀ 21, 23, 24
Thamnomanes caesius: ♂♂ 13 (4), 14, 15 (2), 16 (4); ♀♀ 13 (3), 14 (2), 15 (3), 18
Myrmotherula brachyura: ♀ 7.5
Myrmotherula surinamensis: ♂♂ 7.2, 8.0, 8.2; ♀♀ 7.8, 8.0
Myrmotherula hauxwelli: ♂♂ 8.4 (3), 9.0, 9.5; ♀♀ 8.7, 9.2 (2), 9.6
Myrmotherula leucophthalma: ♂ 9.6; ♀♀ 8.0, 10.2
Myrmotherula ornata: ♂♂ 8.6, 9.0, 9.5 (2); ♀ 9.3
Myrmotherula axillaris: ♂♂ 6.1, 6.6, 7.0, 7.2; ♀♀ 7.0, 7.3
Myrmotherula longipennis: ♂ 8.0; ♀♀ 7.4, 8.4, 8.6
Myrmotherula menetriesii: ♂♂ 8.6, 9.0; ♀ 9.0
Herpsilochmus rufimarginatus: ♂ 10.0; ♀ 11
Cercomacra nigrescens: ♂♂ 15, 16 (5), 18, 19, 21; ♀♀ 14, 15, 16
Pyriglena leuconota: ♂♂ 26 (3), 29 (2), 30, 31, 34, 36; ♀♀ 24, 27 (2), 28 (2), 30
Myrmoborus leucophrys: ♂♂ 18, 21; ♀ 17
Myrmoborus myotherinus: ♂♂ 15 (2), 16, 18; ♀ 17
Hypocnemis cantator: ♂♂ 10 (2), 11 (2), 12; ♀♀ 10, 11
Hypocnemoides maculicauda: ♂♂ 11, 12 (4), 13; ♀ 12
Sclateria naevia: ♀ 22
Percnostola leucostigma: ♂♂ 22, 24, 25 (2), 26; ♀♀ 21, 22, 23
Hylophylax naevia: ♂♂ 9.5, 11 (4), 12; ♀♀ 10, 11, 13
Hylophylax punctulata: ♂♂ 9.4, 9.8, 11; ♀♀ 12, 13
Hylophylax poecilonota: ♂♂ 14, 16 (2); ♀♀ 14 (2), 15, 16 (2), 17
Phlegopsis nigromaculata: ♂♂ 40, 42, 46, 48, 49; ♀♀ 36 (2), 37, 41, 43 (2)
Formicarius colma: ♂♂ 38, 39, 40 (2), 46, 47; ♀♀ 41, 44, 48
Formicarius analis: ♂♂ 45, 50, 57; ♀ 54
Grallaria varia: ♂ 121; ♀ 98
Hylopezus berlepschi: ♀ 39
Conopophaga aurita: ♂♂ 22, 25; ♀♀ 20, 24
Conopophaga melanogaster: ♂ 42

Lipaugus vociferans: ♂♂ 68, 80; ♀♀ 75, 77
Pachyramphus marginatus: ♂ 18
Pachyramphus minor: ♀ 32
Cephalopterus ornatus: ♂ 705; ♀♀ 380, 405
Pipra rubrocapilla: ♀ 10
Pipra fasciicauda: ♂♂ 11, 12 (3), 13 (4), 14 (5), 15 (3), 16 (3), 17 (3); ♀♀ 11, 12 (3), 13 (5), 14 (5), 15 (7), 16 (4)
Heterocercus linteatus: ♀♀ 16, 20
Knipolegus orenocensis: ♂♂ 19, 21; ♀ 18
Megarhynchus pitangua: ♂ 63
Myiarchus ferox: ♂♂ 22, 24; ♀ 17
Attila spadiceus: ♀ 33
Attila cinnamomeus: ♂ 38; ♀ 35
Rhytipterna simplex: ♀ 29
Empidonax euleri: ♂ 12
Terenotriccus erythrurus: ♂♂ 6.0, 6.3, 6.5
Onychorhynchus coronatus: ♂♂ 12, 13 (2), 14 (2)
Platyrinchus platyrhynchos: ♂♂ 11, 12; ♀ 11
Tolmomyias sulphurescens: ♂ 11; ♀♀ 12, 13
Tolmomyias poliocephalus: ♂♂ 10, 11
Tolmomyias flaviventris: ♂♂ 9, 10, 11; ♀ 11
Rhynchocyclus olivaceus: ♂♂ 21, 22; ♀♀ 18, 22
Todirostrum maculatum: ♂ 6.8; ♀ 7.5
Snethlagea minor: ♂♂ 6.0, 6.9, 7.0, 7.6; ♀♀ 6.0, 6.8, 7.0
Taeniotriccus andrei: ♂♂ 8.0, 8.6, 8.8, 9.6
Myiornis ecaudatus: ♂ 4.3; ♀ 4.8
Capsiempis flaveola: ♂ 8.0
Inezia subflava: ♂♂ 6.0, 7.3; ♀ 7.0
Camptostoma obsoletum: ♂ 7.5; ♀ 8.0
Tyranniscus gracilipes: ♂ 8.0
Pipromorpha oleaginea: ♂♂ 7.6, 8.5, 9.0, 9.5, 9.9; ♀♀ 7.1, 8.0, 8.3, 9.6
Pipromorpha macconnelli: ♂♂ 11 (3), 12, 13 (2); ♀ 11
Corythopis torquata: ♀ 13 (placed in Formicariidae by Morony *et al.* 1975)
Campylorhynchus turdinus: unsexed 38
Thryothorus coraya: ♂ 19; ♀ 19
Thryothorus leucotis: ♂♂ 16 (2), 18, 19; ♀ 16
Microcerculus marginatus: ♂ 17; ♀♀ 14, 17
Turdus fumigatus: ♂♂ 60, 67; ♀♀ 53, 59, 72
Turdus albicollis: ♂♂ 36, 39, 47; ♀♀ 39, 46
Ramphocaenus melanurus: ♂ 7.6; ♀♀ 7.8, 8.4, 8.6
Polioptila plumbea: ♀ 6.8
Oryzoborus angolensis: ♂♂ 11 (2), 12; ♀ 10
Arremon taciturnus: ♂♂ 21 (2), 22 (2), 23, 24, 25, 26; ♀♀ 18, 23, 25
Paroaria gularis: ♂♂ 22, 23; ♀♀ 19, 25, 27
Saltator maximus: ♂♂ 33, 38, 40, 41; ♀♀ 35, 41, 43, 45
Pitylus grossus: ♂♂ 22, 23; ♀♀ 19, 25, 27
Passerina cyanoides: ♂♂ 21 (2), 22, 23 (4), 25 (2); ♀♀ 22, 24, 25, 26
Hemithraupis guira: ♂♂ 11 (2), 12
Tachyphonus cristatus: ♂ 23
Tachyphonus rufus: ♀ 36
Habia rubica: ♂ 32
Ramphocelus carbo: ♂♂ 20, 21, 22, 24 (2), 25; ♀♀ 20, 22, 23, 25, 26
Thraupis palmarum: ♂ 32
Euphonia violacea: ♂ 14; ♀ 14
Tangara mexicana: ♂ 21
Phaeothlypis rivularis: unsexed 11
Granatellus pelzelni: ♀ 11
Coereba flaveola: ♀ 8.8
Hylophilus brunneiceps: ♂♂ 8.0, 11; ♀ 8.0
Psarocolius decumanus: ♂ 232
Gymnostinops yuracares neivae × *G. bifasciatus*: ♂♂ 290, 385, 445; ♀♀ 184, 210, 215
Cacicus cela: ♂ 98

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Appendix

Species recorded on the east bank of the Rio Xingu from 13 August to 30 September 1986 but not collected.

Tinamus guttatus
Anhinga anhinga
Butorides striatus
Egretta thula
Pilherodius pileatus
Mycteria americana
Mesembrinibis cayennensis
Cairina moschata
Sarcoramphus papa
Coragyps atratus
Cathartes aura
Elanoides forficatus
Ictinia plumbea
Buteo magnirostris
Leucopternis albicollis
Buteogallus urubitinga
Pandion haliaetus
Daptrius ater
Polyborus plancus
Mitu mitu
Heliornis fulica
Actitis macularia
Sterna superciliaris
Rynchops niger
Anodorhynchus hyacinthinus
Ara chloroptera
Graydidascalus brachyurus
Amazona farinosa
Crotophaga ani
Pulsatrix perspicillata
Nyctibius griseus
Chaetura cinereiventris
Panyptila cayennensis
Anthracothorax nigricollis
Hylocharis cyanus
Trogon melanurus
Trogon violaceus
Ceryle torquata
Bucco capensis
Piculus chysochloros
Campephilus melanoleucos
Cranioleuca gutturata
Cotinga cayana
Tityra semifasciata
Tityra inquisitor
Tyrannus melancholicus
Myiozetetes similis
Pitangus sulphuratus
Pitangus lictor
Myiobius sp.
Tachycineta albiventer
Progne chalybea
Atticora melanoleuca
Volatinia jacarina
Dacnis cayana
Dacnis flaviventer
Cyanerpes sp.
Tachyphonus luctuosus
Thraupis episcopus
Cyclarhis gujanensis
Molothrus bonariensis
Icterus cayenensis